The JOURNAL of GEOGRAPHY

VOLUME L APRIL, 1951 NUMBER 4

UNIVERSITY OF MICHIGAN
APR 16 1951
PERIODICAL READING ROOM

In This Issue

Distribution and Development of the Beef Cattle Industry of Florida . *H. O. Lathrop*

Maps and Slow-Learners . . . *Jessie Asa*

Britain's Groundnut Scheme in East Africa . . . . . *Benjamin F. Richason, Jr.*

Basic Geographic Learnings at Secondary School Levels . . . . . *Ruby M. Junge*

Geography Almost Ignored in Colleges, Survey Shows . . . . . *Benjamin Fine*

National Council at Work . *H. O. Lathrop*

Geographical Publications . . . . . .

Published by A. J. NYSTROM & CO., for THE NATIONAL COUNCIL OF GEOGRAPHY TEACHERS
THOMAS FRANK BARTON, *Editor*

OUTSTANDING McGRAW-HILL BOOKS

by

VERNOR C. FINCH
Professor of Geography
University of Wisconsin

GLENN T. TREWARTHA
Professor of Geography
University of Wisconsin

McGraw-Hill Series in Geography

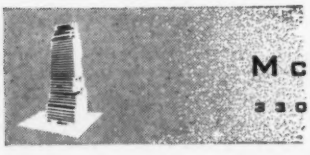
ELEMENTS OF GEOGRAPHY. Physical and Cultural *711 pages, $6.00*

Highly praised and widely adopted, this exceptional text regards physical geography as an analysis of the resource base for nations and peoples. While physical processes are by no means omitted, they are minimized in order to lay greater emphasis upon the forms of physical elements. The stressing of forms rather than processes conforms to the author's conception of physical geography as the science which treats of the potentialities of the physical earth for human use. The selection of material has been made with the purpose of describing and depicting the major elements of geography so that the student may acquire a background for interpreting the significance of their areal association. *Third Edition*

PHYSICAL ELEMENTS OF GEOGRAPHY *557 pages, $5.50*

Physical Elements of Geography is a republication of Part I of the more comprehensive *Elements of Geography: Physical and Cultural*. It is designed to supply textual material covering physical elements of geography in a form particularly suited to classroom discussion in beginning courses in college geography. Special merit lies in the choice of material, structure of organization, and manner of presentation. *Third Edition*

Send for copies on approval



McGRAW-HILL BOOK CO., INC.
330 WEST 42ND STREET, NEW YORK 18, N. Y.

Mention the JOURNAL—It Assures Service

The JOURNAL *of* GEOGRAPHY

CONTENTS FOR APRIL, 1951

Distribution and Development of the Beef Cattle Industry of Florida. By H. O. Lathrop 133

Dr. Lathrop, Head of the Department of Geography and Geology, Illinois State Normal University, has been a frequent contributor to the JOURNAL OF GEOGRAPHY and to other educational and scientific magazines for over twenty-five years. He has been active in NCGT affairs on both the state and national levels. Among his many other activities he has served as president of the Illinois Council of Geography Teachers, as coordinator of the NCGT in Illinois, and is now our president.

Maps and Slow-Learners. By Jessie Asa 145

Miss Asa is a special class teacher in the North Hills School District near Pittsburgh, Pennsylvania.

Britain's Groundnut Scheme in East Africa. By Benjamin F. Richason, Jr. 150

Mr. Richason, after completing his Master's Degree at Indiana University, is now teaching his second year at the J. Sterling Morton Junior College, Cicero, Illinois. During the Second World War he worked in the branch of the service which prepared aerial photographs.

Basic Geographic Learnings at Secondary School Levels. By Ruby M. Junge 158

Miss Junge is Associate Professor, Division of Education, Michigan State College. Her dissertation at the State University of Iowa was entitled "A Course of Study in World History and World Geography for Secondary Schools."

Geography Almost Ignored in Colleges, Survey Shows. By Benjamin Fine 165

This article reports an extensive research project carried out by Mr. Fine of the *New York Times*. Because of its great significance in the development of geographic education, the JOURNAL requested permission to republish it.

National Council at Work. By H. O. Lathrop 171

Geographical Publications 172

Contents of the JOURNAL are indexed regularly in the *Educational Index to Periodicals*.
Authors alone are responsible for opinions and statements in the JOURNAL.

The JOURNAL *of* GEOGRAPHY

THOMAS FRANK BARTON, *Editor*
GEORGE J. MILLER, *Assistant Editor*
Indiana University, Bloomington, Indiana

Send manuscript and books for notice or review to the *Editor*.
Send orders for back numbers to JOURNAL OF GEOGRAPHY.

Published monthly except June, July and August
PUBLICATION OFFICES: 450-454 AHNAIP STREET, MENASHA, WISCONSIN

Business Correspondence, Membership Dues, and Subscriptions may be sent to Publication office or to

A. J. NYSTROM AND COMPANY
PUBLISHERS, JOURNAL OF GEOGRAPHY
3333 ELSTON AVENUE, CHICAGO 18

Entered as second-class matter January 15, 1919 at the post office of Menasha, Wisconsin under the Act of March 3, 1879.

Junior High School Geography

By RIDGLEY & RUSSELL. A year's course for the 8th grade. Offers study of inter-relationships of countries from the standpoint of economic geography of the United States. Elementary research. A very fine education text. Includes set of ten tests. Only 72¢. Write for approval copy. Clip this.

WESTERN CONTINENTS

By RIDGLEY-HOWE, Study of the Western Hemisphere—resources, industries and activities. Ten tests. 128 pages. 60¢.

EASTERN CONTINENTS

By RIDGLEY-HOWE, Helpful in teaching world geography. Covers Europe, Asia, Africa and Australia. Ten tests. 60¢.

and
McKNIGHT & McKNIGHT PUBLISHING COMPANY
Dept. 100, Market & Center Sts. Bloomington, Illinois

GEOGRAPHY in the HIGH SCHOOL

This new volume of the Geographic Education Series brings together valuable teaching helps for a more effective emphasis on geography in high school. The sixty chapters in this book have been carefully selected from the Journal of Geography and have been edited and arranged to provide a wide range of suggestions for the selection and presentation of geographic materials. Eight major groups as follows: Nature and Value of Geography in the High School, General Techniques, Economic, Global, Political, Conservation, Meteorology and Study of Local Community. 404 pages, cloth, $3.50.

Junior High School Geography

By RIDGLEY & RUSSELL. A year's course for the 8th grade. Offers study of inter-relationships of countries from the standpoint of economic geography of the United States. Elementary research. A very fine education text. Includes set of ten tests. Only 72¢. Write for approval copy. Clip this.

and
McKNIGHT & McKNIGHT PUBLISHING COMPANY
Dept. 1, Market & Center Sts. Bloomington, Illinois

Tell Advertisers You Saw It in the JOURNAL

The JOURNAL *of* GEOGRAPHY

Copyright 1951, by the National Council of Geography Teachers

VOLUME L APRIL, 1951 NUMBER 4

DISTRIBUTION AND DEVELOPMENT OF THE BEEF CATTLE INDUSTRY OF FLORIDA

H. O. LATHROP
Illinois State Normal University

The rapid growth of the beef cattle industry of Florida has attracted widespread attention. One popular magazine[1] recently published an article carrying the striking title "Cow Hands on the Grape Fruit Range." The seeming anomaly of a highly developed tourist industry, extensive cattle ranges, and intensively cultivated citrus fruit and truck farms in close juxtaposition is intriguing to the geographer. In this connection, it should be remembered that as recently as 1924 J. Russell Smith called Florida an "economic frontier."[2]

The factors of position, extent, and maritime location go far in helping to understand the varied and diverse activities of the state, including the beef cattle industry. Florida is a medium-sized state with an area of 56,000 square miles, approximating that of Illinois. It stretches thru nearly six degrees of latitude and exceeds 400 miles in its north-south extent. The average width of peninsular Florida is about 125 miles, and no part of the state is more than 75 miles from the ocean. The warm Gulf Stream washes three coasts of the state and modifies the climate, particularly in winter.

Florida is a land of contrasts. The truly tropical south end of the state, culminating in the Everglades and in frostless Key West, is in striking contrast with the more temperate end of the state, 400 miles to the north. Mainland or continental Florida contrasts in many ways with peninsular Florida. The so-called Central Highlands[3] have many marked differences from the coastal swamps and lagoons bordering both east and west coasts. The Gold Coast tour-

[1] *The American Magazine,* December, 1949.
[2] Smith, J. R., *North America,* Harcourt Brace, 1925, p. 277.
[3] Iron Mt. 325 ft. high is the highest point in Florida.

ist strand of the southeast coast is matched by that of the somewhat more democratic centers of Tampa and St. Petersburg along the west coast. In strange contrast, between these two highly developed tourist areas lies a land of cut-over forests, swamps, prairies, and everglades. It is in these lands that the beef cattle industry has reached the zenith of its development. In some portions of the central and northern parts of the state, human activities are oriented about lumbering and turpentining with many general farms interspersed among forests and cut-over lands.

DISTRIBUTION OF CATTLE

The heaviest concentration of beef cattle is in the area northwest of Lake Okeechobee and southeast of Tampa (Fig. 1).[4] From this area of heaviest production the area of concentration extends northward thru the central part of the state. Even in the central citrus belt, there is heavy production of beef cattle. One of the striking features of this district is the abrupt change from citrus orchards to truck farms, or to swamp, or to cut-over lands, or to cattle ranches. Geographic unconformities are the rule in many parts of Florida.

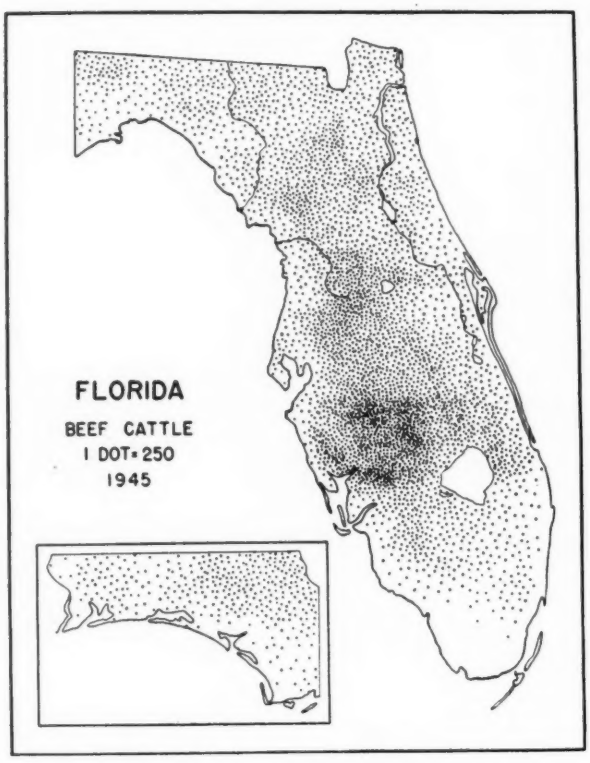


FIG. 1. Distribution of Beef Cattle in Florida.

Many cut-over forest lands and swampy areas have already been converted into cattle ranches, and the change is still in progress. The low-lying, wetter cattle ranges have drainage ditches running thru

[4] *United States Census of Agriculture*, 1945, Vol. I, Part 18.

them at frequent intervals. In some places the ditching machines are still at work. Bulldozers are rooting out remaining scattered trees and pushing them into piles for burning, or caterpillar tractors are pulling discs among the scattered pines preparatory to seeding for pasture. Fire is being used to kill out hammocks of cabbage palms and palmetto grasses so that these may also be seeded.

GROWTH OF THE BEEF CATTLE INDUSTRY

The map[5] showing increase of all cattle in Florida indicates an increase over the state in general, with the greatest increase in the areas of heavy beef cattle production. (Fig. 2) The two decades 1929-1949 saw an increase of 100 per cent in cattle in Florida (Fig. 3). That is a surprising increase; but from 1940-1945 the cattle production increased from 721,000 to 1,114,000, or an increase of 53 per cent in the five-year period. By January 1950 there were 1,392,000 cattle in Florida or 82 per cent above the 1940 figure.[6] That most of the increase was in beef cattle is indicated by the fact that milk cattle increased but 14 per cent in the period 1940 to 1945, or from 90,428 to 103,328. This may be regarded as a normal increase of dairy cattle and probably coincides roughly with increase in population for the state. Deducting

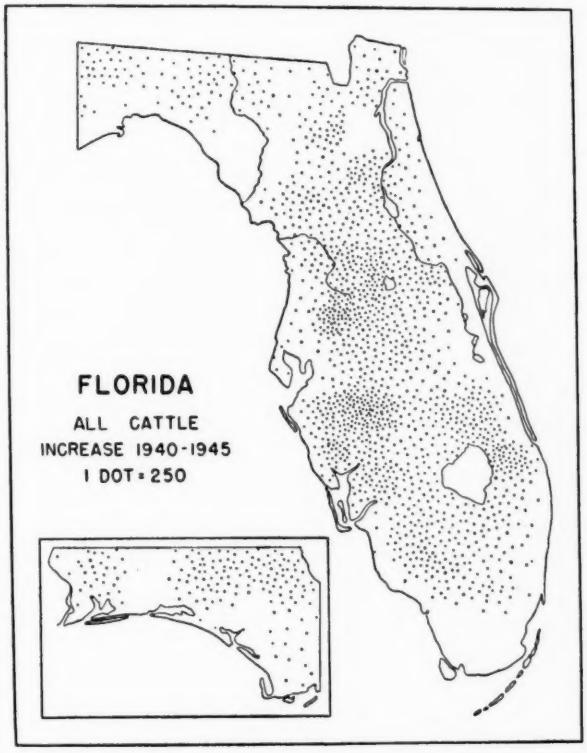


FIG. 2. Increase of All Cattle in Florida.

[5] U. S. Census, *op. cit.*

[6] U. S. Agricultural Statistics, 1948 and Mimeographed Release, U. S. Bureau of Agricultural Economics, January 1, 1950.

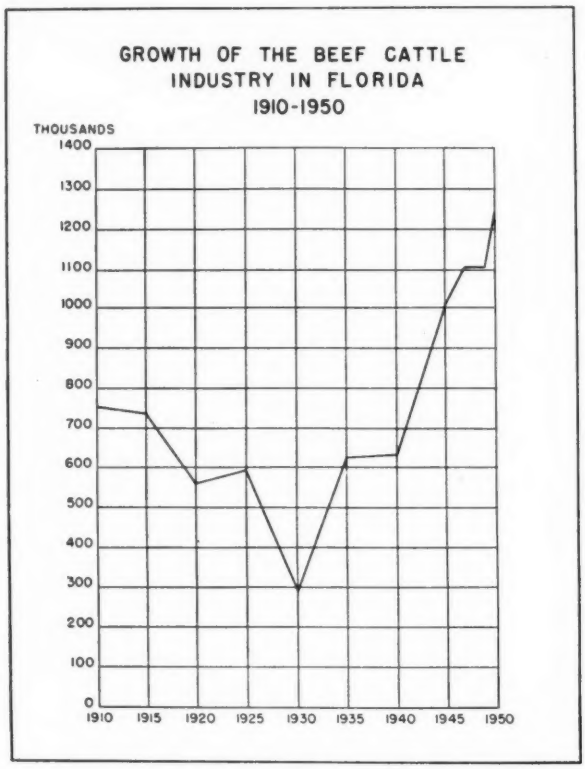


FIG. 3. Graph Showing Decline and Growth of the Beef Cattle Industry in Florida.

the number of milk cattle (Fig. 4) from the total for 1945 gives 1,011,598 beef cattle as compared to 630,587 in 1940.[7] Of the 1,392,000 cattle as given by the Bureau of Agricultural Economics for 1950, 1,100,000 are beef cattle.[8] This figure gives Florida the rank of twelfth among the states in the production of beef cattle.

A further analysis of the statistics indicates that the chief increase in cattle production was on existing farms, probably on the larger farms or ranches. All cattle increased 53 per cent from 1940 to 1948. In contrast, the number of farms reporting cattle increased only from 32,398 to 35,623 or an increase of less than 10 per cent.[9]

CONDUCT OF THE INDUSTRY

The farms and ranches in Florida vary greatly in character and size, the average size farm being 572 acres. Such a figure means little, since some of the truck farms and citrus groves contain but a few acres each, and individual ranches reportedly reach acreages as high as 150,000 supporting 60,000 to 120,000 head of cattle.[10] The Census of Agriculture for 1945 shows 1,273 farms having more than 1,000 acres each, seven 75,000 to 100,000 acres, and six over 100,000 acres. There were no farms over 20,000 acres in 1935, so

[7] U. S. Census, *op. cit.*
[8] Mimeographed Release U. S. Bureau of Agricultural Economics, *op. cit.*
[9] U. S. Census, *op. cit.*
[10] Lewis, L. H., Personal letter.

that the increased acreage of farms has been coincident with the development of the range cattle industry. Of the 8,629,940 acres in farms of more than 1,000 acres each, 7,655,158 acres were pastured, and of the 5,609,208 acres in farms of over 100,000 acres each, all but 308,717 acres were in pasture. The land in farms of over 100,000 acres each has a value of only $6.48 per acre.[11] These statistics show rather conclusively that the growth of the beef cattle industry in Florida has brought about the consolidation of land in large farms and ranches, many of them being on low-priced lands.

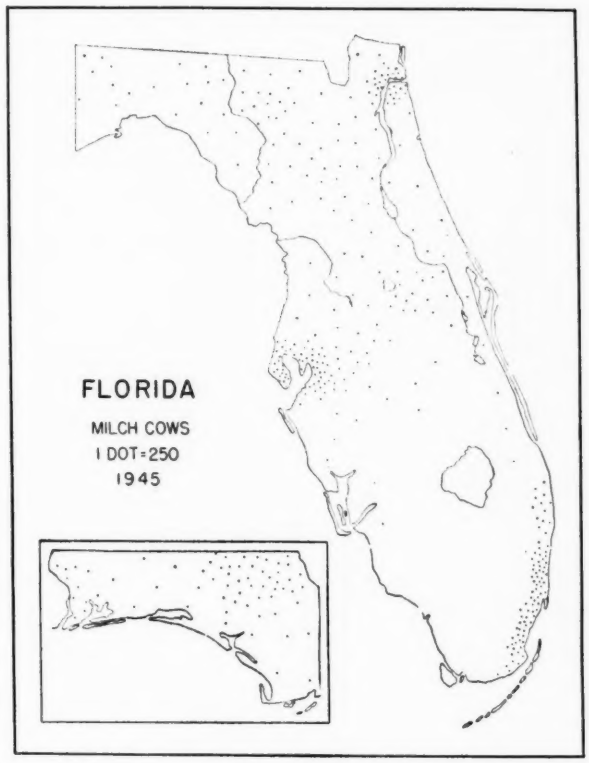


FIG. 4. Distribution of Milk Cows in Florida.

It seems safe to assume that a large proportion of the beef cattle are produced on the large type farms and ranches. It is estimated that six to eight ranches have 15,000 or more head of cattle, an additional 10 to 15 have 3,000 or more, and numerous ones have 1,000 or more. Probably 60,000 farms and ranches in the state own cattle, some of the farms (as distinguished from the ranches) having only a few head and others 300 to 600 head.[12]

Seventy per cent of cattle ranches and farms are fenced, and a statewide stock law requiring fencing went into effect in September, 1950.[13] On the larger ranches the cattle are branded and looked after by cowhands wearing sombreros, spurs, high-heeled boots, and mounted in highly decorated saddles on tough cow horses (Fig.

[11] U. S. Census of Agriculture, *op. cit.*
[12] Lewis, L. H., Personal Letter.
[13] Ibid.

5). One large ranch in Osceola County is operated from one headquarters and three camps. Their outfit, "consisting of 10 riders, cowhands, and a chef" and the necessary horses is moved by motor truck from one location to another, twenty to thirty miles distant.[14] The nearly flat, sandy lands with frequent parallel drainage ditches stretch away as far as the eye can see. On some of the ranches scattered pines break the monotony of the landscape, interspersed by patches of palmetto grass and cabbage palms. The pasture

FIG. 5. Cattle on Range near Lake Okeechobee. Cowboys Are Seminole Indians on the Brighton Indian Reservation. (Courtesy, FSNB, Tallahassee.)

grasses in midwinter are short and the animals, in general, poor in flesh.

Some of the larger ranches are characterized by pretentious homes with adjacent feeding sheds, open to the south and in some cases all around. On others, supplementary feeding is done from racks on the open range, since the winters are so mild that animals require little protection. Along the highway, loading racks are seen at frequent intervals. In some areas wind-mills provide water for the animals, but in other cases the ubiquitous drainage ditch is sufficient.

The atmosphere of ranch life is present not only on the range but in the cities and villages as well. Shops feature range equipment including hats, spurs, saddles, and high-heeled boots.

[14] Elkins. *op. cit.*

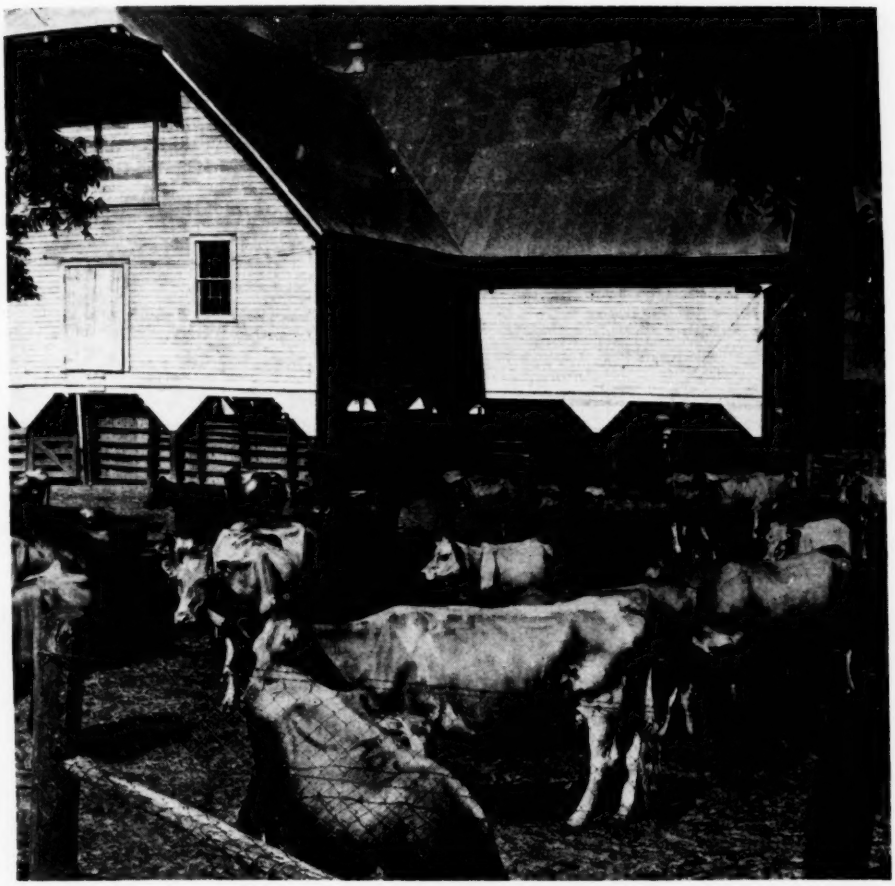


FIG. 6. Dairy Herd with Brahman Cross at Penny Farms, Northeastern Florida. Note Open Barn Basement, Emphasizing the Mild Florida Winters. (Courtesy, FSNB, Tallahassee.)

Improved breeding characterizes Florida cattle, registered herds of American strains running as follows: Hereford 175, Angus 72, Shorthorn 22, Devon 8, and Red Polled 3.[15] The cattle exhibit varying degrees of crossing with Brahman breeds, 60 per cent showing some Brahman blood[16] (Fig. 6). Pure bred herds of Brahman cattle are in evidence in many places, and there are 269 registered Brahman herds in the state (Fig. 7). Such herds, in general, are in better flesh in winter than the American strains or crosses, either because they stand better the short winter pastures, or because they are being produced for breeding purposes and receive better care.

[15] Lewis, L. H., Personal Letter, *op. cit.*
[16] Ibid.

The range forage appears to improve from south to north, and the animals are in correspondingly better flesh in the central and northern parts of the state. Moreover, winter feeding and finishing are more important in these areas.

MARKETS AND MARKETING

In Florida, as over most of the United States, farm slaughtering of beef animals represents an important item in the disposition of

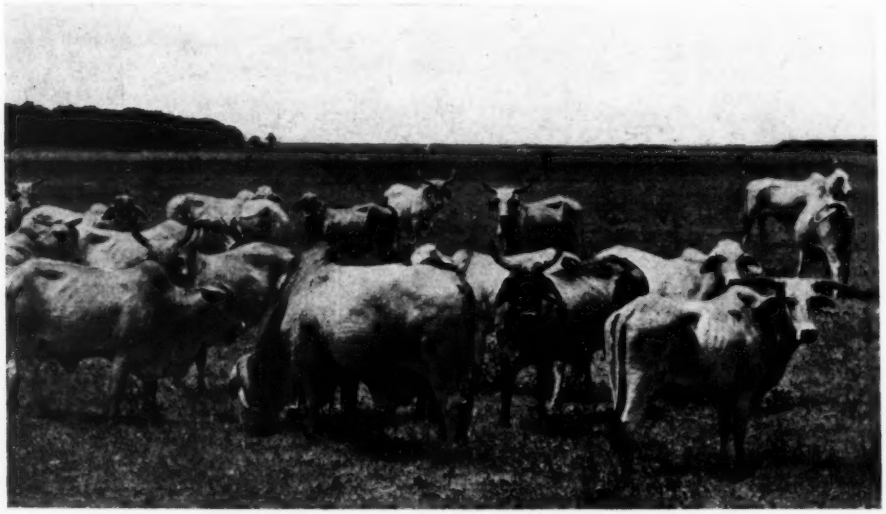


FIG. 7. A Typical Scene on a Florida Cattle Ranch. Brahman Cattle in Foreground, Range and Scattered Timber in Background. (Courtesy, FSNB, Tallahassee.)

beef cattle. The 1945 Census of Agriculture shows that 12,144 were slaughtered on farms for local consumption. The number decreased from 15,804 in 1940, probably indicating a trend toward less farm slaughter and to the increased selling of live animals to packing houses.

In 1949 there were three federally inspected packing plants in Florida and 15 state inspected plants and abattoirs.[17] The federally inspected plants are at Bartow, Tallahassee, and Ocala, and the state inspected plants are well distributed over the state with the greatest concentration in central and south Florida. There are also listed 36 city and non-inspected plants, and there are still others not listed. No inspected packing plants are listed for Miami, but large numbers of cattle are slaughtered there by local butchers. The same is true in other parts of the state. Florida cattle supply about

[17] Lewis, L. H., Mimeograph Release, October 7, 1949.

two-thirds of the normal consumption of beef for the state.[18] Better restaurants and hotels advertise "western beef" on their menus, indicating that the Florida product has not yet attained the standards of grain fed animals, or that there is a prejudice against local beef. Marketing facilities in Florida have shown a marked increase during the last decade.

In addition to beef slaughtered in Florida, large numbers are shipped to slaughtering plants in adjacent states. In the area west of the Suwanee River there are no packing plants in Florida and the animals are shipped to plants at Moultrie, Tifton, Albany, and Columbus, Georgia; and to Montgomery and Dothan, Alabama.[19] Some animals are also shipped to these plants from other parts of Florida. All of the Big-Four Packers are represented in Florida and adjacent states.

There is an extensive movement of feeder cattle out of Florida. Cattle from Florida reach about three-fourths of the states of the Union, some going to points as far distant as Minnesota and Texas. However, not all such animals are of the stocker and feeder type. Since the quarantine against Mexican cattle, large numbers of Florida cattle, particularly Brahman and Brahman crosses, have been shipped to various states for rodeos. It is estimated that approximately 140,000 cattle and calves cross the Florida state line annually in marketing operations.[20]

In general, cattle from the larger ranges are marketed as feeder and stocker cattle and shipped elsewhere for finishing off. Most of the cattle in Florida feed lots are produced on the farms. It is estimated that 12,000 to 15,000 cattle are finished on corn, oats, and hays produced in the state. The feeding period for such animals is 75 to 150 days.[21] A possible 18,000 to 22,000 additional animals are finished off on velvet beans and other short feeding operation in 60 to 90 days.[22] The greatest concentration of feed lots is in northern Florida in the Madison-Quincy area and in the Gainesville-Ocala area in the central part of the state.

Some Handicaps of the Industry

The ranch cattle industry of Florida is thriving despite certain handicaps. Pests and diseases have to be fought continuously. Fre-

[18] Lewis, L. H., Mimeograph Release, *op. cit.*
[19] Ibid.
[20] Ibid.
[21] Ibid.
[22] Lewis, Personal Letter, *op. cit.*

quent dipping has virtually eliminated ticks and the consequent Texas fever. Small isolated areas have been reinfested, but are under control.[23] The heat of the summer is hard on American breeds, since these strains have no sweat glands to cool the animals. Interbreeding with Braham strains helps greatly in several ways. The Brahman cattle have sweat glands which enable them to withstand better the hot summers. Their thousands of generations of existence in the hot tropics have developed an immunity to many of the indigenous pests and diseases present in Florida, and certain odors render them undesirable hosts to other insects. It is reported that one-sixth Braham blood gives an animal immunity to the Texas fever.

Since 1935 the screw worm has spread thruout Florida and has become a serious menace to the cattle industry.[24] Various preventives and treatments have been developed, but they are difficult and expensive to apply to the point of control. The long warm season and short winter encourage other parasites such as lice and ticks.

Another problem is to develop adequate winter pastures. The sandy soils in many parts of Florida are not conducive to the growth of most grasses and legumes used for cattle pasture and hay in other parts of the United States. Napier, Para, and Molasses grasses are used extensively in south Florida. Bahia, Bermuda, Pangola, Carpet, Dallis and Florida Paspalum are especially valuable in central and north Florida, but may be also grown in other parts of the state.[25] On the heavier soils, lespedeza, various clovers, and other legumes are grown. Winter pasture grasses are vital to the development of the cattle industry in Florida, because the winter range and the release from heavy winter feeding give Florida a great advantage over most other cattle producing states. Every effort, including scientific experimentation, is being carried out to develop grasses and legumes to provide suitable winter pasturage. This is important not only to Florida but to the entire South. Such grasses supplemented by sorghum, napier grass, and sweet potato vine silage; small grains such as oats and rye; corn; and even root crops such as sweet potatoes, dasheens, and cassava seem to be the answer to Florida's winter feeding problem.[26] The weather hazards of drought, floods, and hurricanes are always present, but the beef cattle industry flourishes in spite of them.

[23] Ibid.
[24] Ibid.
[25] Ibid.
[26] Lewis, L. H., *Beef Cattle in Florida,* Bull. No. 28, Chap. 7-11.

ADVANTAGES OF THE INDUSTRY

The most obvious advantage of the beef cattle industry in Florida has been indicated in the foregoing discussion. The elimination of winter feeding with the attendant expensive farm buildings gives the Florida industry a great advantage over Corn Belt lands where these items of expense make up a high percentage of the cost of producing beef. There is every indication that scientific research and experimentation will succeed in developing suitable winter pastures. "Florida's livestock industry will expand in proportion as 'Florida's fields are green in winter.' Hay, grain and green grazing in winter is the great need."[27]

The cattle industry, as well as the citrus industry, is profiting measurably by the discovery of the high nutritious quality of citrus pulp. Dried citrus pulp valued at $57 per ton has about the same feeding value as dried beet pulp valued at $80 per ton, Florida prices.[28] Such pulp, combined with molasses, also a Florida product in part, gives cheap local feed that can be used to supplement winter pastures or for fattening of the animals for market. During the year 1945-46 the Citrus Processors Association reported the production of 108,470 tons of citrus pulp and 44,168 tons of citrus molasses. The latter has about the same feeding value as blackstrap molasses.[29] Florida's location adjacent to producing areas of cotton seed oil cake also gives an advantage to Florida producers for this type of feed.

Until better winter ranges are developed, it is profitable to supplement range pasture with some more condensed feed. Cattle left to winter on the native range grasses alone may lose 20 to 30 per cent of their maximum summer weight.[30] Since nutritious perennial clovers and grasses do not thrive in parts of Florida, a natural sequence of annual grazing crops can be planted, thereby insuring satisfactory and profitable feed thru the year. The wise use of mineral fertilizers helps greatly in the production of permanent pastures as well as sequent grazing crops.

It has been learned, not only that certain grasses and legumes are more valuable as cattle feed, but that certain mineral fertilizers added to the soil increase the growth and fattening qualities of feed grown upon such soils. Such knowledge will be of great advantage in enabling the farmers and ranchers to use Florida's

[27] Ibid., 87.
[28] Snook, A. J., Fla. Fruit Canners, Division L. Maxey, Inc., Personal letter.
[29] Lewis, L. H., Bull. No. 28, *op cit.* 98-99.
[30] Ibid., 116.

sandy, swampy soils more profitably. Small quantities of minerals such as salt, calcium, oxide of iron, and copper sulphate added to the feed have been found to give a large profit.

In Conclusion

Recent reports indicate that the rapid strides made by the beef cattle industry in Florida during the last decade bid fair to continue. The ability of Florida cattlemen to produce cattle cheaper than most other parts of the country is based upon open winter pastures supplemented by condensed feeds, with little cost for barns and shelter. Recent experimentation indicates that green, sequent, nutritious pastures can be grown in summer and in winter where permanent tame pastures can not be established. The future price of cattle and the general economic conditions of the country are important and uncertain, but Florida should be able to compete advantageously with other parts of the nation in producing beef cattle.

MAPS AND SLOW-LEARNERS

JESSIE ASA
Special Education, North Hills Joint Schools, Pennsylvania

Geography and slow-learners can be mixed. By this I mean that slow-learners have a need for geography, geography in its simplest phases. The geography taught them must be real, vivid, and practical. It must answer their questions concerning their immediate environment and later answer questions about the world, not in minute details but in broad generalizations. They, too, need to understand that not all peoples of the earth live in regions such as ours, eat the same foods and live in the same types of houses. They need an understanding of how we in our particular locality adjust to our environment, and how people the world over fit themselves to their environments. They need an understanding of our interdependence upon one another.

THE SPECIAL GROUP

The chronological ages of the group about whom I am writing range from eight to thirteen. Their mental ages vary from five to nine years. Their backgrounds are as varied as their ages. Some have very narrow backgrounds, and few experiences outside their homes. Others have wide backgrounds; they have traveled and met many people; they have access to books, movies, and radios. As a result of these great differences in chronological age, mental age, and background, information contributed by a few children is above the level of others of the group. However, by starting the work at the level of the most immature child, the group is able to progress.

INTRODUCING A UNIT ON MAPS

The making and reading of maps by an immature group can be developed thru working out an introductory unit on where we live in relation to our school, the time spent in reaching our school, and the things we see along our way to school.

This year the unit was started at the beginning of the term. The first discussions centered around how each of the children arrived at school. Since the children are sent to this class from the entire district numerous means of transportation were brought out in our discussions. Due to the short attention span several brief discussion periods were needed to bring out the importance of the different means of transportation necessary to the group's arrival at school,

and dependence of the group upon the bus-driver, motor-man, and others for their arrival at school. Each child then drew on 9″ by 12″ paper pictures showing how he arrived at school. These drawings were displayed on a large chart, each drawing being labelled by the teacher with a short sentence. For example, John rides on the bus. The whole chart was then used as a means of review and a lead to the next step in the development of the unit.

First Step: Developing Concept of Time

Awareness of time presented our next problem. To the more immature children in the group, time was a meaningless thing. Each child was told to check with his parents, bus-driver, or street-car motorman concerning the time he left home and with the teacher on arriving at school. The group worked out each child's total traveling time in minutes by use of a clock. This entailed the making of another chart by the children showing the time spent by each child in reaching school. Large circles cut from manila paper represented the clocks. Time spent in traveling was filled in with crayons. These clocks were also pasted on a large sheet of brown wrapping paper. Under each clock a short sentence told the length of time it took each child to reach school. For example, It takes Eddie 25 minutes to come to school. A pictorial means of comparison now was available for use.

Second Step: Concept of Distance

Thru the visual comparison of the crayon-filled areas on the clocks the concepts of nearest and farthest were introduced. Who lived the nearest to the school? Who lived the farthest from the school? Why was it necessary for some children to employ means of transportation other than walking to reach the school? Would it take a much longer or shorter time for those children to reach school if they walked? These were questions discussed by the children. Some were raised by the children; others were introduced by the teacher as discussion topics. Our purpose had been accomplished; the children had been exposed to the concept that as man has progressed improved methods of transportation have greatly reduced the amount of time needed for traveling from place to place.

Third Step: Observation on a Field Trip

The third step in the unit concerned the things seen along the way to school. In order to build a common background for future

work it was decided to walk to the home of the child living the nearest to the school. Various children suggested things we should observe along our way, such as the businesses, means of transportation, homes, plants and animals. The topic under discussion, "What we see along our way to school," was repeated. The group was ready for its excursion.

The distance covered was no more than three city blocks, but it entailed walking along a busy highway. Frequent halts were made to afford opportunities for individuals to call attention to various means of transportation seen along the way, some transporting men and women to their means of livelihood, other vehicles transporting bread, milk, and other essentials of our daily life to stores and homes. We saw the trees in their fall attire. We paid particular attention to the horse chestnut, since this tree had been studied the previous spring. We collected specimens of small plant life from a vacant lot. Emphasis was placed on learning the way to Johnny's home, directions, turning to the left and right, the manner in which highways should be crossed, and how one walks in relation to traffic when there are no sidewalks.

Much was accomplished by this short excursion. The children were made more conscious of the immediate neighborhood of the school, their powers of observation were brought into use. Science, geography, safety, and English intermingled during the real experience, just as they were correlated during the re-living of the experience in the classroom.

FOURTH STEP: MAKING A MAP

Subsequent discussions made it necessary to have some sort of illustration of the walk to which the group could refer. What kind of illustration? That was the problem. Should pictures of each of the houses or businesses along the highway be drawn? But how could the road traveled by the class be shown thru individual pictures? An older boy suggested making a road map, limiting it to just the streets the group had traveled. The group favored this suggestion and from that point follow-up ideas poured from the children. A large sheet of white wrapping paper was placed on the floor (See picture). A rectangle was drawn and labelled Martin School. The streets were ruled on the paper—squares represented the houses. Larger squares or rectangles were labelled with names of businesses. The map was completed quickly, with as many children as possible taking part in the activity. The trip had been traced pictorially as well as verbally.

On another day a simple legend or key to the map was added so that other people would know what the small squares represented. It was decided on comparing the map made by the children with a physical map of the United States that keys or legends were necessary for the reading of maps for how else could the reader know that a wavy black line represented a river, a curving red line represented railroads, or a full circle, a city of so many people?

Making Their Own Map.

THE PROBLEM OF DIRECTION

The completion of the map and the re-acting of the trip thru the use of our map led to a new problem. It all started with a sentence stated by one of the group, "We walked up the street to the corner." Immediately an older child disagreed. He pointed out that we hadn't walked up, rather we had walked a certain direction. Just what direction he didn't know. A new problem was before us. The children were unable to suggest a way of finding out what direction, so they asked the teacher for help. They were reminded of the fact that the sun rose in the East. The next morning the entire group went outside the building to locate the sun and the East. But what of the other directions, North, South, and West.

We discussed the manner in which early sailors had told directions. The North Star was mentioned by the children. How did sailors in the present time know whether they were traveling in the right directions?—the compass, of course. There was a compass

available in the building. This was used by the group to find North. East had been found thru observing the sun. They learned then that once North is located that if one stands facing the North—South is to his back, East to his right, and West to his left. They had walked in a southwestern direction from the school. Their problem had been solved.

WORTHWHILENESS OF THE UNIT

In the development of the unit thus far, the group as a whole had participated in many new activities. The youngest children, with the lowest mental ages had been exposed for the first time, perhaps to maps, legends, and directions. Their learnings concerning those three are not great. What they did learn they will forget in a short time, if the same basic experiences are not repeated in a different setting. These experiences were the first few bricks in the building of a tower. Alone they are meaningless, but constant addition of bricks will erect the tower. More and more experiences must be built onto the first experience and then someday the children doing the experiencing will be able to use these concepts or understandings that were thoroly developed in his daily life.

Maps, legends, directions enriched the unit for the older children, for they had previous groundwork to which they added the new experiences. Their gains can be more easily measured.

The teaching of geography to these children is worthwhile, in spite of the fact that the greater portion of the time they do not realize that they are studying geography. If their mental capacities permit them to learn only of their immediate environment, then they should have the oportunity to learn about it; for it will enrich their lives as adults as well as children to know about their community and state.

BRITAIN'S GROUNDNUT SCHEME IN EAST AFRICA

BENJAMIN F. RICHASON, JR.
Morton Junior College

INTRODUCTION

The old Roman saying, "*Ex Africa semper aliquid novi*" ("Out of Africa something new always comes"), appears to be as true today as it was in the days of the Caesars, for in East Africa a new agriculture project has been developed by Great Britain for the production of groundnuts. The scheme received its impetus from the post war food crisis in Britain where home production accounts for no more than 50 to 60 per cent of the food requirements and only 10 per cent of the cooking oils and fats. Britain's system of farming also has been largely dependent upon imported oil seeds from the tropics. The extraction of oil from these seeds left a residual, concentrated oilcake of great value as cattle feed. Because of the grave food shortages following World War II, many nations ceased to export oil seeds and Britain was forced into its East African dependencies to obtain cooking oil, margarine, salad oil, more oil for soap, and added meal for cattle.

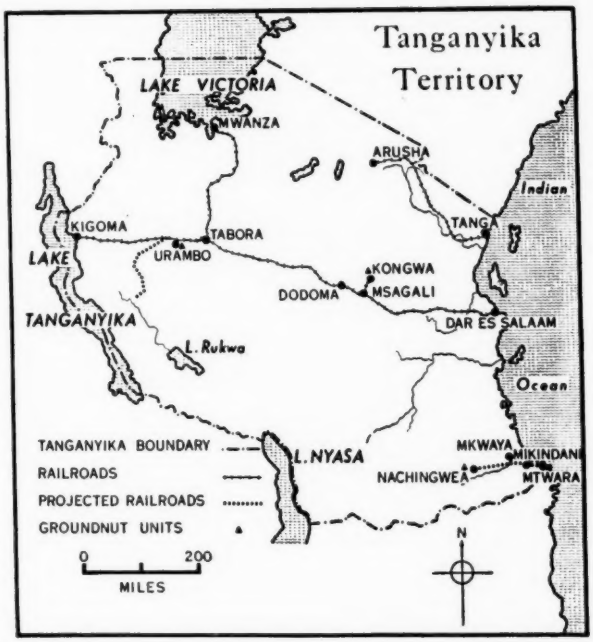
Important, also, is the contribution the groundnut scheme will make in alleviating the misery of the Africans at a time of increasing population with its associated land impoverishment. The success of the groundnut scheme may prove to be beneficial to many East African areas by providing native societies with examples of good land-use; by supplying more food for local consumption, thereby relieving the pressure of people upon the land; and by expanding communication facilities whereby additional resources may be developed.

HISTORY OF THE GROUNDNUT SCHEME

The groundnut scheme was conceived in 1946 by the managing director of the United Africa Company. He was impressed by the potentialities of vast tracts of unoccupied virgin bushland in East Africa which could be brought under the cultivation of oil plants. Groundnuts were chosen as the major crop because of their comparatively high oil content, and because being an annual they would yield returns quickly. His proposal for a large scale, mechanized development of groundnuts was accepted by the British Govern-

ment, and in 1947 the first year's work was ordered. In the hope of producing an initial harvest early in 1948, the government invited the United Africa Company to act as managing agents for a limited period.

The plan involved the establishment of 107 mechanized units of about 30,000 acres each, covering a total of 3¼ million acres of virgin bushland. According to the plan 80 of these units were to be located in Tanganyika, 17 in Northern Rhodesia, and 10 in Kenya. For the clearing of these vast areas, secondhand equipment was all that could be obtained, and the greatest single source of supply proved to be the U. S. Army warweary tanks and tractors in the Philippine Islands. A Canadian firm later agreed to supply all of the needed agricultural machinery for the first two years of operation.



At the end of March, 1948, the groundnut project was transferred to the Overseas Food Corporation, which is a government corporation established under the Overseas Resources Development Act of 1948. Each groundnut area is under the control of a Regional Manager, who is responsible to the East African management for policy directions, which in turn is directed by the Board of the Overseas Food Corporation in London. At a future date it is the intention of the British Government to transfer the project to the Africans on a co-operative basis.

PHYSICAL SETTING OF THE GROUNDNUT UNITS

The major effort of the groundnut scheme has been confined to Tanganyika Territory, and the Central Province was chosen as

the primary starting point because of its relative accessibility, and because the topography is suited to mechanized agriculture. Lying only a few miles north of the Central Railway and 240 miles inland from the port of Dar es Salaam, clearing and agricultural equipment can be brought from the coast to the units with the minimum of difficulty. The region cleared for planting lies near the village of Kongwa in the southernmost part of the Masai Steppe where the topography is in a late stage of maturity.

Considerable clearing and planting operations also have taken place around Urambo in the Western Province and Nachingwea in the Southern Province. Topographically both areas are in the old age stage of the fluvial cycle. The areas in the Southern Province are now thought to be the best suited for groundnut production, but adequate communications are necessary before large scale, mechanized cultivation can be carried on.

Rainfall. The amount of rainfall required by the groundnut plant during the growing season is between 20-25 inches. Altho marginal and highly erratic, the rainfall of the groundnut units in Tanganyika meets this requirement. Records show that the rainfall in the Kongwa area averages 25 inches annually, about 90 per cent of which comes during the five month period of November to April.[1] In the Urambo region about 30 to 35 inches of rain falls annually, of which 80 to 85 per cent is incident during the same five month period. The groundnut units in the Southern Province receive a more bountiful and reliable rainfall (30 to 40 inches annually) than the other units in the Territory. Regional droughts, of paramount concern in all units, occur on an average of not more than once in 5 to 7 years, but temporary cessations of rainfall during the growing season may also cause extensive crop damage.

Soils. The groundnut plant demands a light sandy soil in order that the flower which develops at the stem joints may, after pollination, force its way underground where the pod develops. Sandy "miombo" soils cover almost all of the area selected for this "groundnut" project in the Western Province and about two-thirds of the area taken in the Southern Province.[2] These are a complex and little known group of light textured soils belonging to Milne's group of "plateau soils" in the Western Province and

[1] *Atlas of Tanganyika Territory*, 2nd ed., Department of Lands and Mines; Survey Division, Government Press, Dar es Salaam, 1948, p. 5.

[2] *A Plan for the Mechanized Production of Groundnuts in East and Central Africa*, Cmd. 7030, London, 1949, p. 41.

"plain soils" in the Southern Province.[3] The remaining portions of the groundnut areas in the Southern Province and those of the Kongwa area are characterized by light red loams of considerable depth. These non-laterized red earths are the most reliable for groundnut production, but upon drying out they become compact and abrasive, inflicting serious damage on agricultural equipment. Heavy, black or grey, lowland clays ("mbugas") are found in association with the soil groups thruout the units in the Territory. These are not particularly suitable for groundnut production, but are capable of producing heavy yields of sorghum cereals.

Vegetation. Bushland and thicket along with scattered wooded grasslands make up the dominant vegetation type in the Kongwa area.[4] As a result it was anticipated that the area could be cleared with little difficulty. However, serious problems were encountered in rooting. The baobab, which attains a considerable width, is a conspicuous type in parts of the thornbush, and where their density has not made reduction imperative they have been left standing to provide natural windbreaks for soil conservation.

The type of vegetation around Urambo and Nachingwea is quite different from that of the Kongwa area. In these areas thickly wooded forests are present with more than 200 trees per acre.[5] The "mbugas" are pure grasslands and no problem was presented in clearing these areas as they had been cultivated previously by the natives.

AGRICULTURAL PRACTICES

The Senior Agricultural Officer of Tanganyika stated, "In East Africa the deterioration of the lands occupied by native peoples is as serious as anywhere in the world, and despite efforts made to check this, there has been a failure to do more than slow down the rate at which damage is being done. . . ."[6] The British expect to meet this threat in the groundnut units, as well as to supply an example for the rest of East Africa, by opening up new lands; by improving conditions in the areas thru anti-erosion measures, by the provision of water supplies, and by the introduction of more modern methods of cultivation.

[3] *Atlas of Tanganyika Territory*, pp. 3-4.

[4] Gillman, Clement, "A Vegetation-Types Map of Tanganyika Territory," *Geographical Review*, Vol. XXXIX, No. 1, January, 1949, p. 14.

[5] *Ibid.*

[6] Thornton, D., "Land-use Adjustments for Soil Conservation, Tanganyika Territory," *Bulletin Agricole du Congo Belge*, Vol. 40, Nos. 3-4, Sept.-Dec., 1949, p. 2158.

Soil and water conservation are the underlying factors in the success of the groundnut project. The units completed have been divided into fields of 640 acres and protected against wind erosion by windrows of felled bush, bulldozed into banks following the contour of the land. Grass strips have been encouraged around all fields to further assist the established windrows.[7] In the Western and Southern provinces there are dense forests, and whole belts of trees, therefore, can be left standing to form natural conservation barriers. Small gullies have been filled in and grassed-waterways have been provided between contour ridges. These waterways discharge into artificial basins which provide a valuable addition to the water resources of the areas.

A four year rotation has been planned for the groundnut units. After two years of groundnuts, the rotation will pass to two years of grass pasture. The main crop will always be groundnuts, but experiments have been conducted to determine the best crops to use rotationally. These experiments have embraced sunflower, safflower, sorghum, and soya.[8] Sunflowers, which have proved to be suitable and economic for production on first year land, have been established in the rotation plan in many of the units.

In spite of preliminary surveys, the shortage of fats and oils in Britain, and a strong desire for success on the part of those engaged in the project, the acreage of the crop planted has fallen short of expectations due to a lack of experience in clearing the African bush, the unserviceable condition of much of the second-hand equipment, the lack of implements with which to combat the various root systems, and a lack of technical ability on the part of the natives engaged in the work. There were 46,267 acres planted in the Kongwa region during the 1948-49 season. Groundnuts occupied 25,105 acres; sunflowers, 19,492 acres; and maize, 1,733 acres. In the Urambo region during the 1948-49 season, 2,789 acres were planted of which 487 acres were sown to groundnuts, 2,052 acres to sunflowers, and 250 acres to maize. In the Southern Province, 564 acres were planted during the same period to a variety of experimental crops such as groundnuts, sunflowers, maize, safflowers, and sorghum.[9] Thus a total of 49,620 acres were cropped by

[7] Personal letter from Mr. Rodney Begg, Chief Information Officer, Overseas Food Corporation, Kongwa, Tanganyika Territory.

[8] *Ibid.*

[9] *Overseas Food Corporation: First Annual Report and Statement of Accounts*, HCP 252, 1948-49, London.

1949 in comparison with the 1,230,000 acres expected as stated in the original White Paper. Much of the criticism of the groundnut project has followed this failure of the Overseas Food Corporation to achieve the targets originally set by the United Africa Company and found by experience to have been wholly impracticable.

In the 1949-50 season, groundnuts occupied 9,500 acres in the Kongwa area. Of this 3,100 acres were harvested in the spring with an average yield of 320 lbs. per acre (in shell). A severe drought at Kongwa early in 1950 materially affected yields, but it was envisaged that during a normal year these should be at least 750 lbs. per acre. The whole of the 2,700 acres of groundnuts planted in the Urambo units was harvested with an average yield of 810 lbs. per acre (in shell). In the Southern Province, of the 250 acres of groundnuts harvested, the average yield was about 800 lbs. per acre.[10] Sunflowers occupied over 64,000 acres thruout the units in the 1949-50 season. Land which was under groundnuts in the 1947-48 and 1948-49 seasons was sown in sunflowers in the 1949-50 season. The land which should have passed to groundnuts in the rotation plan was less due to difficulties in planting and cultivating the crop in topographic and soil areas not suited to groundnuts.

There is sufficient land in the Kongwa area suitable for groundnut production so that 15 or 20 units (450,000 to 600,000 acres) could be put into operation. Under present conditions of crop yields and communications, however, the development at Kongwa is being limited to 3 units (90,000 acres). The figure quoted is inclusive of buildings, soil conservation strips, windbreaks, field work shops, etc., leaving some 81,000 acres available for cultivation.[11] It has also been agreed to limit the Urambo region to about 90,000 acres in favor of making the main effort in the Southern Province where the climate is not as marginal for crop production.

LABOR SUPPLY

Over 300,000 natives now work for wages in the Territory, but only about one-tenth that number will be permanently employed on the groundnut units.[12] The main labor force has been supplied by the local tribes, but it has been reported that some workers have

[10] Begg, Rodney, *loc. cit.*

[11] *Ibid.*

[12] Wakefield, A. J., "The East and Central African Groundnut Project," *Journal of the Royal Society of Arts*, Vol. 96, No. 4770, June 4, 1948, p. 394.

walked from distances as great as 150 miles in order to join the project. About 28,000 Africans were employed by the Overseas Food Corporation for work in the groundnut units in 1949. This was double that of 1948 and consisted of over 13,000 skilled and about 14,000 unskilled workers. Skilled laborers could not be supplied by the African population in sufficient numbers, and about 200 men were brought from the Seychelles and Mauritius for work in all units. Unskilled laborers have been in sufficient supply except in the Southern Province. Here the climate is such that the native grows sufficient food for his family and has a surplus for sale. Thus he does not have to work for wages in order to maintain his standard of living or to pay his taxes.

Wages vary considerably according to the nature of employment. Bulldozer drivers, for example, receive approximately £5 sterling a month.[13] Unskilled workers on lower rates of pay receive, in addition, free food which dieticians consider the best for their needs. Free medical and educational facilities are maintained for all workers.

AIMS OF THE PROJECT

The ultimate aims of the groundnut project may be largely discounted in favor of more immediate aims that may prove to be revolutionary for the people of East Africa. In order to handle the imports of agricultural machinery, as well as the exports of decorticated nuts, communication facilities have been expanded considerably in Tanganyika. Besides road building thruout the various units, suitable routes from the units to the coast have been inaugurated. In the Central Province a branch line of the Central Railway has been completed to Kongwa. In the Southern Province a railroad is under construction up the Lukuledi Valley from Lindi and Mikindani to Nachingwea. The port facilities of Dar es Salaam have been expanded to service the groundnut units of Kongwa and Urambo. As the main effort is now being directed in the Southern Province, the new port of Mikindani was created with deep-water berths and modern loading equipment. Also the harbors of Mkwaya and Mtwara have been improved. A pipeline has been completed from Mtwara to the groundnut units in the Southern Province, supplying the needed fuel oil for the clearing and agricultural machinery.

[13] Begg, Rodney, *loc. cit.*

On the welfare side, the people are learning to live in a detribalized state on land never before occupied by their ancestors. In order to overcome the boredom produced by the security of food, shelter, and life in general, such emotional outlets as 4-H Clubs, agricultural societies, women's societies, and recreational clubs are being organized.[14] In addition a Swahili monthly publication, *Wataugulizi,* was started in 1949.

There is also the medical problem presented by the tsetse fly which infests about three-fourths of the groundnut areas in Tanganyika. Altho some varieties of the fly can be eradicated at little expense by the clearing of thickets, there are vast areas of savanna forest that must be completely cleared in order to eliminate others. The high hopes entertained for the new drug Antricyde as a preventative against trypanosomiasis has been considerably reduced as a result of further trials.[15] Thus the problem of settling people and their cattle in tsetse infested bush of the groundnut areas remains acute.

CONCLUSION

The primary aim of the groundnut project is one of solving the food problem of the British Empire and should not be construed to be a philanthropic venture. As a result of the groundnut scheme, however, the countries of East Africa which are now relatively undeveloped, will be better able to supply Europe with food and to acquire for themselves the economic basis for future self government. There are large areas in East Africa which could be devoted to grazing once the dreaded tsetse fly has been eradicated. There are large areas in East Africa which are capable of agricultural development for crops other than oil seeds. There is a possibility, therefore, that areas in East Africa which are now producing little could become granaries and grazing lands of great importance. The groundnut project may set the example for more modern methods of agriculture and provide the economic justification for the expansion of communication facilities whereby this could become a reality.[16] In any event, the cereal crops which are grown rotationally with groundnuts will add several million tons of grain annually for local consumption. Almost all of the governments of East Africa

[14] Wakefield, A. J., *loc. cit.*

[15] Maher, Colin, "A Note on the Economic and Social Problems in Kenya and Their Relation to Soil Erosion," *Soils and Fertilizers,* Vol. XIII, No. 1, 1950, p. 4.

[16] Wakefield, A. J., *op. cit.,* p. 395.

have had to buy food, mainly maize, from outside Africa for their native populations. In view of this, any approach to making changes in the agricultural economy of the area must be on safe grounds.

BASIC GEOGRAPHIC LEARNINGS AT SECONDARY SCHOOL LEVELS

RUBY M. JUNGE
Michigan State College

GENERAL STATEMENT

A survey of the literature in recent years has shown a need and an accompanying demand for a thoro and comprehensive provision for the development of geographic understandings in the secondary school. This demand may be attributed, in part, to a demonstrated need for, and a lack of understanding on the part of the ordinary citizen in meeting and solving the problems of establishing peace and stability among the nations of the world. Recognition of the fundamental importance of geographic knowledge in the interest of enlightened citizenship centers attention, at once, upon the American educational system and the adequacy of its curricular offerings.

The record shows that geography has never become securely established in the secondary school. Objective evidence of the failure of the American high school to provide opportunity for acquiring geographic understandings is to be found in two surveys made by the United States Office of Education (5, 1). These show that while many high schools offer no geography, those which do include it in their curricula frequently provide no more than one semester of instruction. In addition, such instruction as is provided is more frequently elective in nature thus failing to reach any significant number of pupils. The trend over the past 50 years has been toward less geography at secondary school level. As of the year 1947 geography enrolled but 4.3 per cent of the pupils in grades nine thru twelve. Furthermore, the courses offered are narrow in scope, limited usually to emphasizing economic, commercial, or industrial geography. It is thus readily apparent that geographic instruction has been generally neglected in our high schools.

As a consequence there is wide spread recognition among educators of the critical need for geographic instruction at high school

level. This finds expression in demands for a systematic program of instruction, in almost unanimous agreement that world geography of a functional nature stressing world relationships and providing a sound basis of understanding of world affairs be required of high school pupils (2, 4, 6).

The curriculum maker who accepts the challenge of this demand finds himself confronted with two problems. First, that of finding time in a crowded program of studies, and second, that of determining the nature and content of the course. Since this paper is not specifically concerned with the first problem, suffice it to say that the choice which will have to be made is one between geography taught as a separate subject and geography integrated with some other, such as history. Either choice has merit and limitations.

When the curriculum maker concerns himself with the second problem, that of determining the nature of the course, he finds in the literature little guidance. A study of stated objectives of instruction shows them none too clearly defined with no single statement appearing adequate to provide any real basis for determining the nature of instruction. Research in curricular content provides little information for curriculum construction at secondary school level. In brief, the research may be characterized as being concerned mainly with the determination content of minor elements of instruction rather than the fundamental.

It is thus obvious that any attempt to provide an adequate program of instruction in high school geography must concern itself first with endeavoring to determine what the fundamental facts, knowledge, and concepts are which should guide instruction.

A Determination of Fundamentals of Instruction

Problem. It is generally recognized by educators that the selection of curricular content shall take cognizance of the basic concepts and generalizations in a given field. This is verified by the numerous studies in the various school subjects employing that approach. The fundamental importance of concepts and generalizations for curriculum construction is noted in the following quotation from **Bagley**:

> Concepts and generalizations go beyond subject matter; they are at once interpretations of subject matter, insights into human experience and direct objectives of educational effort.—Concepts and generalizations drawn from subject matter but built into the pupil's outlook help to bridge the gap between information as such and educational values as such (3).

The study which I shall report here recognized these values and assuming that certain geographic concepts and generalizations are essential to an optimum understanding of world relationships and world affairs, it attempted to 1. select those geographic concepts and generalizations which contribute directly to an understanding of world affairs, and to 2. evaluate their learnability for high school pupils.

Procedure. Briefly, the procedure involved 1. the selection of a group of geographic works of recognized merit, representing the fields of economic, political, physical, and social geography; 2. an analysis of the selected works for the geographic concepts and generalizations contained in them; 3. the preparation of a rating scale composed of these concepts and generalizations to be submitted to a jury of geography experts to secure their judgments as to the essentialness of these items for an understanding of world affairs on the part of the average citizen with a high school education; and 4. the preparation of a second rating scale composed of essentially the same items to be submitted to a jury of master teachers of high school geography to determine the degree to which the concepts and generalizations might be considered adapted to the ability of high school pupils. It was felt that this method, properly safeguarded to render it as objective as possible, should yield useful returns.

To guide the selection of the works to be analyzed certain criteria were established. These were:

1. Geographic works analyzed must represent four major aspects of geography; the physical, the economic, the social, and the political.
2. Works must be of a general nature. This was to insure that concepts and generalizations selected would be of general applicability.
3. Works must be of advanced level or professional rank.
4. Works selected shall be authoritative and geographically scientific.
5. Works must lend themselves to the enunciation and formulation of generalizations.

With these criteria in mind, a selection of critical works of recognized geographic merit was obtained by means of an examination of books reviews contained in three professional periodicals. Reviews were examined in all issues of *The Journal of Geography* from 1910 thru 1944; *Economic Geography* from 1925, when it was first published, thru 1944; and *The Geographical Review* from 1916 thru 1944.

All works receiving reviews in these periodicals which qualified

as being of a general nature, of advanced or professional rank, and representing the four major fields of geography were noted on cards with a statement as to the general nature of the work and condensation of criticism both favorable and unfavorable. Reviews were then studied to determine whether they might be classified as authoritative and geographically scientific. Those found to be so regarded were then given a preliminary reading to determine whether they might lend themselves to the enunciation of generalizations and principles. A final check of the list of works was made by consultation with a member of the geography faculty at the University of Iowa. By this means seven works were obtained for analysis.

These were:

1. *Fundamentals of Economic Geography.* Nels A. Bengtson, and William Van Royen, Prentice-Hall, 1942.
2. *Elements of Geography.* V. C. Finch and G. T. Trewartha, McGraw-Hill, 1936.
3. *Influence of Geographic Environment.* Ellen C. Semple, Henry Holt and Company, 1911.
4. *Elements of Political Geography.* Samuel Van Valkenburg, Prentice-Hall, 1939.
5. *Principles of Human Geography.* Pierre Vidal de la Blache, Henry Holt and Company, 1926.
6. *Geography: An Introduction to Human Ecology.* C. Langdon White and George T. Renner, D. Appleton-Century Company, 1936.
7. *The Earth and the State: A Study in Political Geography.* Derwent S. Whittlesey, Henry Holt and Company, 1939.

Analysis of these works was guided by certain criteria set up to limit and confine the data to that which would be pertinent to the study. Concepts were selected which met the following criteria:

1. Concepts, conveying geographic ideas or meanings shall be embodied in interpretative statements of fact or definition.
2. Proper names shall be excluded from consideration as concepts.
3. Concepts concerned with specific or particular locations shall be excluded.

Generalizations were required to satisfy certain other criteria.

1. Generalizations must be comprehensive statements of correlational relationship existing between man and his environment.
2. A generalization must be sufficiently broad to be of general applicability.
3. Generalizations must be true without exception within the limitations of the statement.
4. A generalization must not be a definition.

The method employed in analysis is outlined as briefly as possible. Keeping the above criteria in mind each book was carefully read and each concept and generalization as it was discovered was written on a card together with the source and page reference.

When a generalization was not directly stated but implied a generalization was formulated which embodied the implied relationship. When such formation was recorded it was followed by the letter "I" and the page or pages from which it had been abstracted. In all other cases the author's precise wording was retained.

In order to insure that analysis was thoro, a re-check of each book was made by means of a second reading. Following this all concepts and generalizations were separated into categories representing physical, economic, social, or political geography. Cards bearing similar concepts and generalizations in each of the four categories were then grouped to select the most accurate, the most inclusive, and the most clearly worded statement. In case no card contained an adequate statement, one was carefully formulated. If such a statement represented a slight re-wording the letter "R" was used to indicate the fact. Where it became necessary to combine two or more original statements to secure an adequate one the letter "C" was used to indicate this. In all cases sources and page references were retained for later re-checking.

By this process of classification and re-phrasing the original 968 concepts and generalizations were reduced to eighty-eight inclusive statements representing fundamental geographic understandings contained in the seven books analyzed. As a final check on these a member of the geography faculty of the University of Iowa was consulted who studied each statement carefully making suggestions and concuring on the final wording.

These statements were then prepared as a rating scale and submitted to twenty-two geographers for evaluation as to their essentialness. Geographers were requested to rate the items as "essential," "desirable," "neither essential nor desirable," or "not valid." Each member of the jury who took part in this evaluation met two or three following qualifications:

1. Was a geographer whose works had received favorable mention.
2. Was an editor of a professional geography periodical.
3. Was a national officer of a geographical society.

In order to secure a measure of the degree to which the concepts and generalizations were adapted to the ability of high school pupils, a second rating scale was sent to a selected group of secondary school teachers for rating. Jury members were recommended by the Advisory Board of the National Council for the Social Studies for their outstanding performance as teachers of high school geography.

Teachers were asked to rate the learnability of the items on the scale as "well adapted to the ability of high school pupils," "moderately adapted," or "poorly adapted." Rating scales were submitted to twenty-six teachers and evaluations received from twenty-four.

FINDINGS ON THE RATING SCALES

An analysis of the data secured by means of the rating scale on essentialness of the concepts and generalizations showed that 1. experts were reasonably well agreed on the essentialness of the items in physical and economic geography. All of the items in both categories were considered essential and desirable by at least 75 per cent of the jury; 2. the jury showed considerable difference of opinion on the essentialness of the items in social and political geography. They appeared to consider these items less essential than those in economic and physical geography; and 3. the majority of all concepts and generalizations were considered essential. Eight generalizations, representing concepts in political and social geography, were eliminated as neither essential nor desirable.

Examples of the concepts and generalizations upon which there was high agreement follow:

Physical Factors

1. An intersecting system of parallels and meridians permits the accurate location of any point or place on the earth's surface.
2. Land controlled, or continental climates, are characterized by large daily and seasonal extremes of temperature; ocean controlled, or marine climates, show less variation and are more moderate.
3. Ocean currents accompanied by onshore winds have a direct effect upon the temperature and precipitation of the adjacent land mass.
4. Relief is an important factor in determining the economic possibilities of a region or nation.

Economic Factors

1. Man's economic activities represent an adjustment to both the social and natural factors of the environment.
2. A good supply of agricultural land is a fundamental element in the economic structure of a nation.
3. The cost of transportation is an important factor in determining the location of heavy and capital industries.
4. The possession and control of resources of such minerals as coal, iron, and oil is a major factor in the economic and political strength of a nation.

Political Factors

1. Political areas in the past have often cohered about easily defended highlands, or fertile lowlands, particularly, a natural nexus of rivers or other easy routes of travel.

2. The mode of government results from a combination of the physical environment and the character and political heritage of the people.
3. The size and form of the State are important factors influencing the national interests and policies.

Social Factors

1. Political boundary lines tend to create problem areas when they divide economic units or homogeneous ethnic groups.
2. Language serves as a common bond in bringing people together in a community of ideas and becomes an important element in national unity.
3. Population is distributed unevenly over the earth as a result of the operation of geographic, economic, historic, and cultural forces.

An evaluation of the data secured on the learnability of the items for high school pupils revealed that 1. teachers were, in general, agreed upon the learnability of the items in physical and economic geography. All but three items were judged adapted to the maturity of high school pupils by at least 75 per cent of the jury; 2. teachers varied widely in their opinions on the adaptability of the items in political and social geography. However, all but two of these were considered adapted to the ability of high school pupils by at least 75 per cent of the teachers.

Of the 88 concepts and generalizations submitted for evaluation to the two juries, 13 were eliminated for either failure to be considered sufficiently essential or failure to be judged adapted to the maturity of high school pupils. Thus the contribution of this study was the provision of a list of 75 concepts and generalizations which were deemed to contribute directly to an understanding of world affairs and which were considered adapted to the maturity of high school pupils. It is hoped that this list will be useful as a guide in developing a program of instruction in high school geography.

REFERENCES

1. Anderson, Howard R. "Offerings and Registrations in the Social Studies," *Social Education,* XIV (February, 1950) p. 74.
2. Atwood, Wallace W. "Global or World Geography," *The Journal of Geography,* XLIII (September, 1944) p. 202.
3. Bagley, W. C. "The Determination of Minimum Essentials in Elementary Geography and History," Fourteenth Yearbook, Part I, National Society for the Study of Education, 1915. p. 152.
4. Cutshall, Alden, "Worthwhile High School Geography," *The Journal of Geography,* XLIII (November, 1944) p. 22.
5. Jessen, Carl A. and Herlihy, Lester B., *Offerings and Registrations in High School Subjects,* Bulletin No. 6, United States Office of Education, Washington, D.C., 1938, p. 28.
6. Lemons, Hoyt. "The Role of Geography in Post-War Education," *Education,* LXV (January, 1945) p. 286.

GEOGRAPHY ALMOST IGNORED IN COLLEGES, SURVEY SHOWS[1]

BENJAMIN FINE

Altho the United States is engaged in global leadership, the nation's colleges and universities virtually ignore the teaching of geography.

Fewer than 5 per cent of the college students in this country are taking even one geography course this academic year. Something under 1 per cent of the undergraduates have enrolled in an American geography course. Ninety-four percent of liberal arts institutions do not require a geography course for the undergraduate degree. Only two colleges in the nation require such a course for the graduate degree.

Paradoxically, the majority of college authorities consider geography essential for intelligent citizenship. All but one of 298 liberal arts colleges and universities recently surveyed by *The New York Times* agreed that every American citizen should have some knowledge of geography. Seventy-eight per cent held that geography would help students become better citizens.

Comments by the college presidents, deans and other institutional spokesmen showed that college students are woefully ignorant of almost any phase of geography, that geography apparently is the forgotten subject in the college curiculum. Many of those who replied said students coming directly from high school had almost no knowledge of geography, whether American or world.

The study showed that while 77 per cent of the colleges and universities offer geography courses and 56 per cent have students enrolled in such courses, only 32 per cent have students enrolled in American geography. Only 12 per cent of the graduate institutions have courses with students enrolled.

A total of 81,242 undergraduates, or 4.8 per cent of the undergraduate enrollment reached in the study, were found to be enrolled in one or more geography courses. Among the graduate students, only 7,163, or 2.2 per cent, were enrolled.

Students taking American geography were even fewer. This fall only 2,046 freshmen, or .6 per cent, enrolled in this subject. The total undergraduate enrollment amounted to 14,181 or .8 per cent,

[1] Reprinted from the *New York Times*, December 18, 1950, by permission of Mr. Fine. Mr. Fine is continuing his research and additional findings will be released later.

while the graduate enrollment was listed at 876, or .3 per cent. About 17 per cent of the students taking geography courses were enrolled in American geography.

In reply to the question "Are courses in geography required for a degree?" only 6 per cent of the colleges said "yes," the others said "no." Only two colleges said they required geography for a graduate degree.

Students majoring in fields in which one might suppose geography would play an important part were excused from contact with this subject. Eighty-one per cent of the students majoring in economics are not required to take a geography course. Similarly, geography is not required for sociology majors in 92 per cent of the colleges, for government majors in 90 per cent, for history majors in 86 per cent and for education majors in 64 per cent of the colleges.

Not Required for Admission

At the same time, the colleges do not ask their entering students to offer a high school course in geography. Of the 264 colleges and universities that replied to the question, only one said geography was required for admission.

Even tho geography is not required for admission, an average of 6.5 per cent of the students offered a geography course as one of the units for admission to college. However, the general pattern was one of students entering college without a high school course is geography and continuing thru four years without any course in this field on the collegiate level.

On the other hand, 37 per cent of the college heads said they believed one or more courses in geography should be made compulsory. They urged that students take either world or American geography in order to prepare for more responsible roles in the atomic age. Only 10 per cent, felt that geography should be compulsory on the graduate level.

Seventy-six per cent of the colleges voted in favor of more geography for their students, giving cogent arguments why a knowledge of this subject is essential for better citizenship.

Of 215 colleges and universities that commented on the question of providing American citizens with some geographical knowledge of other countries of the world, only one said geography was not necessary.

Fully one-third of all the college officials responding to the *Times* questionnaire agreed that no democratic nation knows so

little about its geographical backgrounds as we do. They regarded this condition as inimical to the best interests of our country, particularly in times like the present.

Many educators were outspoken in their comments on the existing lag between what is considered desirable and what is being done on most campuses. Typical was the observation of Dr. Samuel Van Valkenburg, director of the graduate school of geography at Clark University, that modern geography is most important as a base for good citizenship. History and geography, he stressed, should go hand-in-hand as a foundation for citizenship.

"The position of the United States as world leader and protector of democracy," Dr. Van Valkenburg said, "can only be effective if the American citizen, especially if he has a college education, has some geographical knowledge of the rest of the world and has been trained to evaluate the problems of other nations based on geographical factors. We have at present few men capable of understanding a large part of the world, and world leadership asks for many experts and also for some understanding by the mass of the population."

These are the reasons advanced by educators why geography should be taken by college students:

1. It enriches life and widens the horizon of interest.

2. Geographical knowledge of the homeland is essential for good citizenship.

3. A better knowledge of the world and its peoples will lead to a better appreciation of foreign policy and will help the United States in its efforts to retain the leadership so suddenly thrust upon us.

4. It will open to the student a new field of concentration which is not limited to teaching but can be applied practically in city, state and national planning and even be of service to the world at large.

5. Geography serves as a bridge between the natural and social sciences and gives specific meaning to the humanities.

The argument is sometimes advanced that by the time students get to college they do not need any additional courses in geography because they presumably have taken this subject in both elementary and high school. A number of college heads expressed this view, holding that collegiate courses should not duplicate materials already taken earlier in the student's schooling.

An analysis of the survey does not support that position. Most of the college officials asserted that the students coming to them

lacked even the rudimentary basis of a geography course, knowledge of the subject being woefully inadequate and almost unbelievably fragmentary. The study of geography has almost disappeared in the secondary schools and is dwindling in the elementary grades. And, as the present study shows, the vast majority of students are blocked out of geography courses by systems of requirements and restricted electives.

An indication of the student's ignorance in this area is suggested by Prof. Walter M. Kollmorgen, chairman of the Geography Department at the University of Kansas. Each semester the university gives an exploratory examination in its beginning course in geography. Here are the results as shown by the last examination given late in September:

1. The average student can locate thirty-two of the forty-eight states.
2. He can locate two South American countries.
3. He does well to locate four European countries.

STUDENT IGNORANCE DEPLORED

College officials are almost unanimous in complaining that their students are "woefully ignorant" about questions dealing with geography. Many agree with Prof. Genevieve Lamson of Vassar College that almost without exception foreign students have had more and better geographic training than American students. "I have found that one cannot take even the most elementary geographic knowledge for granted," she declared.

In similar vein, Prof. Jan O. M. Broek of the University of Minnesota remarked that the United States was the only country with comparable education where the study of geography is terminated so early in the curriculum. Even in the grades where it is given, he noted, it is usually part of the social studies and is taught by teachers who, having had little or no training in geography, neglect it in favor of other aspects of the social studies.

Just as they agreed that geography is neglected in the elementary and high schools, so most educators agreed that a fundamental knowledge of geography is essential in the world of today. Typical is this comment by Prof. John E. Orchard of Columbia University:

"Geography gives a better understanding not only of our own country but of other countries and other peoples. If we are to discharge our present world responsibilities and participate intelligently in world affairs, we must have such understanding. Geogra-

phy provides one basis for comprehending more fully the behavior of countries and peoples."

Dr. Lee O. Yoder, head of the Geography Department at Drake University, wrote that the study of geography would do more to break down isolationism and bring into being the one-world concept than any other subject that might be taught. A study of the geography of a country, he added, would give the student a sympathetic understanding of the problems faced by the people of that country. Once such sympathetic understanding were established, it would be easier to work out mutually satisfactory international relations, he declared.

The Times study thus indicates that a vast gulf exists between the belief of the educators that geography is important, and the prevailing situation. Responsible college officials have expressed concern over the lack of knowledge in this field. They believe that this country would be in a stronger position in dealing with international affairs if our citizens had a sounder training in both American and world geography.

RESULTS OF SURVEY

1. *Number of liberal arts colleges and universities offering a geography course:*

		% of All Colleges & Universities in United States
UNDERGRADUATE		
Number offering a geography course in curriculum	657	77.4
Number with actual courses (with students)	475	55.9
Number with actual courses (with students) in American geography	272	32.0
GRADUATE		
Number offering a geography course in curriculum	145	17.1
Number with actual courses (with students)	104	12.2
Number with actual courses (with students) in American geography	70	8.2

2. *Number of students taking a geography course:*

		% of Enrollment
Freshmen	23,128	7.2
Total undergraduate	81,242	4.8
Graduate	7,163	2.2

3. *Number of students taking a course in American geography:*

		% of Enrollment
Freshmen	2,046	.6
Total undergraduate	14,181	.8
Graduate	876	.3

4. *Number of different geography courses offered:*

	Undergraduate	Graduate
Number of colleges and universities offering geography courses	657	145
Average number of courses per college and university (of those having courses)	6	7

5. *Number of colleges requiring a geography course for admission:*
Only one college of those who replied said a geography course was required for admission.

6. *Percentage of students offering a geography course for admission:*
An average of 6.5% of the students offered a geography course as one of the units for admission to college.

7. *Number of colleges requiring geography courses for a degree:*

	YES	NO
Undergraduate	6.1%	93.9%

Only two colleges of those who replied said they required geography for a graduate degree.

8. *Percentage of colleges requiring geography:*

	YES	NO
For students majoring in economics	19.3%	80.7%
For students majoring in sociology	7.9	92.1
For students majoring in education	36.5	63.5
For students majoring in government	10.2	89.8
For students majoring in history	13.9	86.1

9. *Percentage of colleges that believe one or more courses in geography should be compulsory:*

	UNDERGRADUATE		GRADUATE	
Yes	103	36.8%	29	10.4%
No	115	41.1	94	33.6
No answer	62	22.1	157	56.1

10. *Do you believe that a fundamental knowledge of geography will enable our students to become better citizens?*

Yes	217	77.5%
No	15	5.4
No answer	48	17.1

11. *It has been said by responsible educators that no democratic nation knows so little about its geographical background as we do. Do you agree?*

Yes	91	32.5%
No	60	21.4
No answer	129	46.1

12. *Because of our present world responsibilities, do you believe the American citizen should have some geographical knowledge of other countries of the world?*
Only one of those who replied said, No.

NATIONAL COUNCIL AT WORK

THE EXECUTIVE BOARD

Dr. Clyde F. Kohn was an elected member of the Executive Board. When he was elected first vice-president, he became a member by virtue of that office. Dr. Henry J. Warman was appointed to the vacancy thus created and has been approved by mail ballot.

Dr. John W. Morris has been called into service and resigned his membership on the Board. Dr. Ralph E. Olson of the Geography Department of the University of Oklahoma was appointed to fill that vacancy and has received approval of the Board.

A meeting of the Executive Board was held in Chicago, Monday, March 19, at 7:30 P.M. Several matters of pressing importance were taken up. For various reasons many Board members could not be present, but a quorum was present. It is unfortunate that it is not possible for the Board to have more frequent meetings. Urgent matters requiring immediate action come up with distressing frequency. Where possible, such matters are referred to the Board for action by mail, but in other cases action must be deferred to later meetings of the Board.

PROGRAM

Progress is being made on the November program. The president and first vice-president had a meeting in Chicago to bring together various suggestions, and a unified program has been outlined and some speakers have been invited. The tentative program has been sent to various persons for suggestions before going into final form. It is hoped the program will be nearly complete by May, and that a preliminary program may be run in the September issue. The theme of the program is, "Geographic Understandings in a Time of Crisis."

CONTRIBUTING MEMBERS

The number of contributing members continues to increase. As noted in a previous issue of the JOURNAL, part of this money is used to promote the production of literature and help in geography and in geographic education. Article 5 of the Constitution of the National Council provides that $4.00 from the dues of each contributing member shall go into the Publications Fund. Some of the bonus publications made possible by this money will be received soon by members of the Council. Following is a list of new contributing members received since the list was published in the February issue of the JOURNAL:

Adah Flemington
Lucia Harrison
Harry O. Lathrop
Paul Porochniak
S. S. Visher
Katheryne T. Whittemore
David C. Winslow
Nora Zink

HARRY O. LATHROP
President

GEOGRAPHICAL PUBLICATIONS

Frederick K. Branon, Sister M. Juliana Bedier, Helen M. Ganey, **My World of Neighbors** (The Catholic Geography Series). W. H. Sadlier, Inc., New York. 192 pages. Illustrated in Color. 1948.

Frederick K. Branon, Sister M. Juliana Bedier, Helen M. Ganey, **North American Neighbors.** (The Catholic Geography Series). W. H. Sadlier, Inc., New York. 256 pages. Illustrated in Color. 1949.

Dissatisfaction with the materialistic philosophy, which impregnates available elementary geography texts, led to the publication of Sadlier's new series of geographies based on Christian principles. The authors recognize God as the creator of the universe and man's consequent dependence upon Him for all things. They accept man as a social being endowed by His Creator with individual dignity and inalienable rights regardless of race, color or creed. They uphold the sacredness and integrity of family life and the dignity of the worker and his work. The mutual interdependence which follows from our social nature is recognized as well as the obligation of all men to use wisely and share in justice and charity the material and non material goods of this world. This obligation of justice and charity is held to exist among nations as well as among individuals. These are the universal concepts on which the new series is based. They dwarf the importance of such materialistic ideas as who has the most coal, the largest irrigation projects, or the largest number of telephones per capita. The uniting force of such concepts, if universally accepted and practiced, is infinitely greater than the binding power of rapid air transportation or modern communication systems.

This review is concerned with the first two books of the series, *My World of Neighbors* and *North American Neighbors*. In the first, these Christian principles are more thoroly incorporated with the content material; in the second, one feels they are not so much the life-giving soul of the text, as somewhat artificially introduced afterthoughts.

In both texts, but especially in the second, cultural geography is emphasized at the expense of physical. One notes an absence of orderly development of geographic concepts. True the miner is more important than the ore and the cotton picker more important than the soil, but there should be a balanced development of physical and cultural elements. The stage on which man acts must be planned so that the necessary equipment is there. Climate, vegetation, surface configurations, drainage, wild life, natural resources—all these must be introduced systematically.

The development of map reading skills is, for the most part, left to the ingenuity of the teacher. Maps have been adequately simplified, tho the advisability of using inset maps at this level might be questioned. Certainly a cross section diagram showing only a broad lowland west of the continental divide is misleading.

Perhaps no tool in the elementary curriculum is leaned on more heavily than the geography text. Hence the text should be absolutely clear in the use and explanation of geographic terminology. Surely confusion or erroneous impressions will result from references to climate as "average weather," to the Great Central Plain as "the Great Central Lowland," to climate of the temperate zone as "generally mild or moderate," or from indiscriminately referring to tropical evergreen forests as "jungles."

The texts are delightfully and profusely illustrated. From a child's point of view the selections are especially satisfactory since the human element is consistently the center of focus.

The weaknesses in these books can easily be rectified in revision. On the whole they are an encouraging omen that the time may not be too far distant when we will guide our children to think of Brazil not only in terms of coffee production, of Alaska not only

in terms of salmon output, of Malaya not only in terms of much needed rubber, but also in terms of *people,* people who are our brothers because we have a common Father in God.

SISTER M. HERMANA OPPREICHT, O.P.

Trinity High School, River Forest, Ill.

G. Morell York, John L. Rowe, and Edward L. Cooper, **World Economic Geography** (Fourth edition). South-Western Publishing Company, Cincinnati, 1950. 693 pages. 38 maps.

This high school text is a rather thoro revision of an earlier book, entitled *Economic Geography,* By Staples and York; yet the fundamental organization and point of view remains much the same. The major emphasis is on commodities. This is apparent both in a section devoted to a topical treatment of commodities, and also in the choice of data for use in characterizing various regions of the world.

The first section (226 pages) is chiefly a description of resources and commodities, in world terms. The pattern is a familiar one—minerals, cereals, food from the sea, beverages, fibers, etc. This is followed by a description of the United States (218 pages) divided into regions by groups of states. Some of these groupings may be a little confusing, for example, "East South Central States," followed by "East North Central States," "West North Central States," and "West South Central States." The final section (232 pages) covers the rest of the world, and is subdivided according to continents and nations.

"Text questions," "problems," "projects," and "topics for class discussion" follow most of the chapters. In many instances these seem rather severely factual, for example, "What state leads in the production of lumber?", "Name and locate some of the more important rivers," etc. There also are questions which the most erudite might find it difficult to answer fully. For instance, "Why is corn grown so extensively in the Corn Belt?" Nevertheless, these various questions, problems, etc., should help the teacher see that there are many different potentials in discussing any particular topic or area.

ARTHUR W. WATTERSON

Illinois State Normal University

LL. Rodwell Jones and P. W. Bryan, **North America: An Historical, Economic and Regional Geography.** Methuen & Co., Ltd., London, 1950 (New York: E. P. Dutton & Co., Inc.). xvi and 582 pages. 130 maps and diagrams. $5.50.

North America, by Jones and Bryan, was first published in 1924. Since then it has advanced thru nine editions and revisions to the present edition of 1950. The book still holds its original organization of three distinct parts, namely, Historical Geography, Economic Geography, and Regional Geography. This, according to the authors, has entailed some slight repetition. It might well have entailed a brief final part to consolidate the major ideas and conclusions of the book.

For the American student of today, the Jones and Bryan volume offers three major values. It illustrates the British point of view in geography at the time of the first edition. It provides an opportunity to look at North America thru the eyes and minds of two of the outstanding European geographers. Finally, it demonstrates the value of simple but effective black-and-white maps and other illustrations.

Geography, in its techniques, methods and thought, has made great progress since the Jones-Bryan *North America* made its first appearance. The available statistical and other materials have increased enormously, both in quantity and quality. For the most part, this advance in materials is not reflected in the present edition. Nevertheless, a

careful reading of this volume should prove a valuable geographic excursion for anyone interested in the geography of North America.

CHARLES C. COLBY

Southern Illinois University

Gerado Canet (with the collaboration of Erwin Raisz). **Atlas de Cuba.** Harvard University Press, Cambridge, Mass. 1949. 64 pages. Paper. $3.50.

The Atlas de Cuba is an excellent graphical study with an analytical approach to national problems. The author, who is Professor of Geography, Instituto de la Víbora, Havana, uses a series of block diagrams, distribution maps, and pictographs to describe the physical setting and economic activities of the Island.

Illustrative material covers a wide range of topics which include: the location, discovery, conquest, and colonization; climate; geology and geomorphology; soils; vegetation; minerals; population and social composition; agriculture; industries; and trade and transportation. Each topic is discussed briefly in Spanish and in a condensed English translation.

A selected bibliography and an index enhance the value of the *Atlas* as a reference for students of geography and commerce. The teacher will be interested in the maps and statistics for use in presenting a case study of the Caribbean region. More important, the *Atlas* will provide the citizens of Cuba with a precise description of their country. As the author emphasizes, few countries have such clear dependence upon location, climate, and soil. Cuba's problem of adjustment to a position as economic handmaiden to the United States requires a high degree of understanding from its citizens and greater efforts toward diversification of national economy.

The *Atlas de Cuba* contains a large folded map (scale: 1″:12.4 miles) which is offered as a "new experiment in cartography." Colors suggest land types: cultivated fields, natural vegetation, etc. The symbols were selected after a series of flights over the Island and an analysis of numerous color photographs taken from the air. Physiographic symbols add to the effect of seeing the true landscape from above. Similar maps of other national areas would be of great assistance in visualizing landscapes as they are.

JACK C. RANSOME

Indiana University

Winnifred Lewis. **Islands of the Western Pacific.** (Around the World Series) Macmillan Company, New York, 1950. 312 pages, illustrated. $1.80.

This book is one of a series of geographic readers which, the publishers announce, are planned for grades four to six. The first third of the volume is devoted to various islands and island groups, such as the Fijis, New Caledonia, the Solomon Islands, New Hebrides, New Guinea and other islands whose names came into our vocabularies during World War II. The author gives interesting detail on the life of people in tropical surroundings. She shows in an admirable manner the impact of white traders and missionaries on the islanders, the effect of mistreatment and exploitation in some places, and the results of efforts to understand the problems of the people and improve their living conditions in others.

The remainder of the book is given over to the Philippines. Material on these islands, readable by elementary classes, has been scarce. This book supplies a wealth of detail, both geographical and historical. Sentences are very short and simple and much information is given in the form of short stories and conversations. It is evident that the author knows the islands intimately and has a sympathetic understanding of the struggles they have had.

Numerous black and white maps give good detail of small areas, while a large map gives the Pacific setting of all the islands mentioned.

The story of the giant child making the continents and islands out of a "Pacific mud pile" will catch the interest of children. But the interjection of map questions at points in the story is a mixture of fancy and fact which may be misleading. Historians may object to the over simplification of the cause of our war with Spain.

ALISON E. AITCHISON

Iowa State Teachers College

K. F. Mather, C. J. Roy and L. R. Thiesmeyer. **A Laboratory Manual for Geology, Part I, Physical Geology.** Appleton-Century-Crofts, New York, 1950. xii and 87 pp. 71 worksheets, 21 figures, 4 plates. $2.75.

Elementary geology, as commonly taught, has become standardized in the pattern set nearly a century ago by Charles Lyell. This is apparent in the uniformity of current textbooks. The writer of a laboratory manual is thus allowed little latitude. Flexibility is controlled by specimen and map collections, field trips and the interests of the instructor. Many colleges therefore prefer to organize their own laboratory programs. A number of these independent programs have appeared as manuals. This manual is an extensive revision of the first part of *A Laboratory Manual of Physical and Historical Geology* by Mather and Roy (1934). The general organization is retained, but the discussions and exercises are considerably improved and the selection of maps is revised and expanded to include many recent issues. Many of these exercises are admirably adaptable to courses in general geography, physical geography or elementary geomorphology.

This manual comprises thirteen units, each supported by exercises in specimen or map study. Of these, six relate to rocks and minerals and seven relate to landforms. The inclusion of weathering, unusual in any such manual, provides here a brief but excellent background for exercises on soils. The treatment of glaciation is remarkably fine. The exposition is clear and complete, supported by well-known maps, diagrams and aerial photographs. The map exercises are well-chosen and designed to entice the student to speculation. Such exercises are as important to geographers as to geologists. Thus, tho this manual was written primarily for geologists, it contains much of value to the geographer.

LOUIS C. PELTIER

West Boylston, Mass.

Elementary Teachers Guide to Free Curriculum Materials: Edited by John Guy Fowlkes, Ann Meyers, and Paul T. Cody. Seventh Edition. Randolph, Wisconsin: Educators Progress service, 1950. pp. 343. $4.50.

This seventh edition of the Elementary Teachers Guide to Free Curriculum Materials is an up-to-date, annotated bibliography of selected free learning aids which include maps, charts, atlases, bulletins, exhibits, scripts, and books. In this seventh edition 735 of the 1660 titles are new. They are identified by an asterisk.

Useful free materials for teachers of geography at all levels of maturity can be easily located under the following classifications in the table of contents: Geography—Canada, Geography—Latin America, Geography—Other Countries, Geography—United States and Territories, Conservation, Maps, Transportation, Air-age Education, Agriculture, Science, Consumer Education, Charts and Posters, and Exhibits. In addition to the table of contents a Teachers Source Materials section lists items that are particularly useful to teachers.

The concise annotations are informative concerning the contents of the materials and indicate the number of pages and if illustrations are included.

To further facilitate the use of the guide it includes a Title Index, Subject Index, and Source Index of the same materials so that availability of materials can be quickly ascertained.

Since the types of materials listed are often some of the most current data available teachers will find this guide a source to valuable supplementary materials and visual aids that can be used in a variety of ways to motivate and help children understand our interdependence and how people live and work in other places.

MAMIE L. ANDERZHON

William Beye School
Oak Park, Illinois

Thor Heyerdahl. **Kon-Tiki.** 304 pp. Rand McNally & Co., Chicago, 1950. 80 illustrations. $4.00.

Kon-Tiki is the description of a scientific expedition crossing the Pacific, an expedition made on a primitive raft of forty balsa logs. On this crude structure, named Kon-Tiki in honor of a legendary sun king, the author and five companions deliberately risked their lives to show that the ancient Peruvians could have made the 4300 mile voyage to the Polynesian islands on similar craft.

The Heyerdahl saga contains eight chapters together with a short appendix, an index, and 80 photographs of the voyage. Chapter headings include the following titles: "A Theory," "An Expedition Is Born," "To South America," "Across the Pacific," "Halfway," "To the South Sea Islands," and "Among Polynesians."

Chapters include descriptions of difficulties in financing the expedition, the story of cutting the balsa logs in an Ecuadorian rain forest and of fashioning them into the raft, and tales of the reactions of men and craft to winds, currents, sea and sky, to fish life and whales, and to the coral reefs that complicated the final landing on the Polynesian Islands.

The book will interest most geographers from the beginning to the end and even the short appendix, short enough to quote below, is filled with things geographic. "My migration theory, as such, was not necessarily proved by the successful outcome of the Kon-Tiki expedition. What we *did* prove was that the South American balsa raft possesses qualities not previously known to scientists of our time, and that the Pacific islands are located well inside the range of prehistoric craft from Peru. Primitive people are capable of undertaking immense voyages over the open ocean. The distance is not the determining factor in the case of oceanic migrations but whether the wind and the current have the same general course day and night, all the year round. The trade winds and the Equatorial Currents are turned westward by the rotation of the earth, and this rotation has never changed in all the history of mankind."

First published in Norway in 1948, Kon-Tiki has now been translated into Swedish, Dutch, Finnish, German, Danish, Italian, and English, and translations are in preparation for numerous other languages, including Esperanto.

EARL B. SHAW

State Teachers College
Worcester, Mass.